

Preaward Compliance Review Report for All Applicants and Recipients Requesting EPA Financial Assistance

Note: Read Instructions before completing form.

I. A. Applicant/Recipient (Name, Address, City, State, Zip Code)

Name:

Address:

City:

State:

Zip Code:

B. DUNS No.

II. Is the applicant currently receiving EPA Assistance? ☒ Yes ☐ No

III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7.)

See Attached OMB Control No. 2030-0020

IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective actions taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7.)

See Attached OMB Control No. 2030-0020

V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3))

See Attached OMB Control No. 2030-0020

VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below.

☐ Yes ☒ No

a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b).

☐ Yes ☐ No

b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable by persons with disabilities, explain how a regulatory exception (40 C.F.R. 7.70) applies.

VII. Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex, age, or disability in its program or activities? (40 C.F.R. 5.140 and 7.95)

☒ Yes ☐ No

a. Do the methods of notice accommodate those with impaired vision or hearing?

☒ Yes ☐ No

b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications?

☒ Yes ☐ No

c. Does the notice identify a designated civil rights coordinator?

☒ Yes ☐ No

VIII. Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. 7.85(a))

☐ Yes ☒ No

IX. Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166)

☒ Yes ☐ No

- X. If the applicant is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator.**

See Attached OMB Control No. 2030-0020

- XI. If the applicant is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet Address for, or a copy of, the procedures.**

See Attached OMB Control No. 2030-0020

For the Applicant/Recipient

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized Official

Stephen C Santell

B. Title of Authorized Official

Secretary

C. Date

03/22/2022

For the U.S. Environmental Protection Agency

I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preaward compliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisions of 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statutes and EPA regulations.

A. *Signature of Authorized EPA Official

B. Title of Authorized Official

C. Date

*** See Instructions**

Instructions for EPA FORM 4700-4 (Rev. 06/2014)

General. Recipients of Federal financial assistance from the U.S. Environmental Protection Agency must comply with the following statutes and regulations.

Title VI of the Civil Rights Acts of 1964 provides that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. The Act goes on to explain that the statute shall not be construed to authorize action with respect to any employment practice of any employer, employment agency, or labor organization (except where the primary objective of the Federal financial assistance is to provide employment). Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act provides that no person in the United States shall on the ground of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under the Federal Water Pollution Control Act, as amended. Employment discrimination on the basis of sex is prohibited in all such programs or activities. Section 504 of the Rehabilitation Act of 1973 provides that no otherwise qualified individual with a disability in the United States shall solely by reason of disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. Employment discrimination on the basis of disability is prohibited in all such programs or activities. The Age Discrimination Act of 1975 provides that no person on the basis of age shall be excluded from participation under any program or activity receiving Federal financial assistance. Employment discrimination is not covered. Age discrimination in employment is prohibited by the Age Discrimination in Employment Act administered by the Equal Employment Opportunity Commission. Title IX of the Education Amendments of 1972 provides that no person in the United States on the basis of sex shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. Employment discrimination on the basis of sex is prohibited in all such education programs or activities. Note: an education program or activity is not limited to only those conducted by a formal institution. 40 C.F.R. Part 5 implements Title IX of the Education Amendments of 1972. 40 C.F.R. Part 7 implements Title VI of the Civil Rights Act of 1964, Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act, and Section 504 of The Rehabilitation Act of 1973. The Executive Order 13166 (E.O. 13166) entitled; "Improving Access to Services for Persons with Limited English Proficiency" requires Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.

Items "Applicant" means any entity that files an application or unsolicited proposal or otherwise requests EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Recipient" means any entity, other than applicant, which will actually receive EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Civil rights lawsuits and administrative complaints" means any lawsuit or administrative complaint alleging discrimination on the basis of race, color, national origin, sex, age, or disability pending or decided against the applicant and/or entity which actually benefits from the grant, but excluding employment complaints not covered by 40 C.F.R. Parts 5 and 7. For example, if a city is the named applicant but the grant will actually benefit the Department of Sewage, civil rights lawsuits involving both the city and the Department of Sewage should be listed. "Civil rights compliance review" means any review assessing the applicant's and/or recipient's compliance with laws prohibiting discrimination on the basis of race, color, national origin, sex, age, or disability. Submit this form with the original and required copies of applications, requests for extensions, requests for increase of funds, etc. Updates of information are all that are required after the initial application submission. If any item is not relevant to the project for which assistance is requested, write "NA" for "Not Applicable." In the event applicant is uncertain about how to answer any questions, EPA program officials should be contacted for clarification. * Note: Signature appears in the Approval Section of the EPA Comprehensive Administrative Review For Grants/Cooperative Agreements & Continuation/Supplemental Awards form.



EPA KEY CONTACTS FORM

OMB Number: 2030-0020
Expiration Date: 06/30/2024

Authorized Representative: *Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.*

Name:	Prefix:	First Name:	Middle Name:
		Preston	D.
	Last Name:		Suffix:
	Cole		
Title:	Secretary		
Complete Address:			
Street1: 101 S. Webster St. AD/8			
Street2:			
City: Madison			
State: WI: Wisconsin			
Zip / Postal Code: 53703			
Country: USA: UNITED STATES			
Phone Number:		Fax Number:	
(608) 267-7556			
E-mail Address: DNRSecretary@wisconsin.gov			

Payee: *Individual authorized to accept payments.*

Name:	Prefix:	First Name:	Middle Name:
		Margaret	
	Last Name:		Suffix:
	Hooper		
Title:	Revenue Accountant		
Complete Address:			
Street1: 101 S. Webster St. FN/2			
Street2:			
City: Madison			
State: WI: Wisconsin			
Zip / Postal Code: 53703			
Country: USA: UNITED STATES			
Phone Number:		Fax Number:	
(608) 266-7497			
E-mail Address: margaret.hooper@wisconsin.gov			

Administrative Contact: *Individual from Sponsored Programs Office to contact concerning administrative matters (i.e., indirect cost rate computation, rebudgeting requests etc).*

Name:	Prefix:	First Name:	Middle Name:
		Stephen	
	Last Name:		Suffix:
	Santell		
Title:	Air Management Grant and Budget Coordinator		
Complete Address:			
Street1: 101 S. Webster St. AM/7			
Street2:			
City: Madison			
State: WI: Wisconsin			
Zip / Postal Code: 53703			
Country: USA: UNITED STATES			
Phone Number:		Fax Number:	
(608) 267-0578			
E-mail Address: stephen.santell@wisconsin.gov			

EPA KEY CONTACTS FORM

Project Manager: *Individual responsible for the technical completion of the proposed work.*

Name: **Prefix:** **First Name:** **Middle Name:**

Last Name: **Suffix:**

Title:

Complete Address:

Street1:

Street2:

City:

State:

Zip / Postal Code:

Country:

Phone Number:

Fax Number:

E-mail Address:

Other Attachment File(s)

* Mandatory Other Attachment Filename:

[Add Mandatory Other Attachment](#)

[Delete Mandatory Other Attachment](#)

[View Mandatory Other Attachment](#)

To add more "Other Attachment" attachments, please use the attachment buttons below.

[Add Optional Other Attachment](#)

[Delete Optional Other Attachment](#)

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Project Narrative File(s)

* Mandatory Project Narrative File Filename:

Add Mandatory Project Narrative File

Delete Mandatory Project Narrative File

View Mandatory Project Narrative File

To add more Project Narrative File attachments, please use the attachment buttons below.

Add Optional Project Narrative File

Delete Optional Project Narrative File

View Optional Project Narrative File

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 02/28/2022

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Enhanced Air Quality Monitoring for Communities	66.034	\$ 0.00	\$ 0.00	\$ 500,000.00	\$ 0.00	\$ 500,000.00
2.						
3.						
4.						
5. Totals		\$ 0.00	\$ 0.00	\$ 500,000.00	\$ 0.00	\$ 500,000.00

Standard Form 424A (Rev. 7-97)
Prescribed by OMB (Circular A -102) Page 1

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	Enhanced Air Quality Monitoring for Communities				
a. Personnel	\$ 247,047.00	\$	\$	\$	\$ 247,047.00
b. Fringe Benefits	117,744.00				117,744.00
c. Travel	1,248.00				1,248.00
d. Equipment	58,265.00				58,265.00
e. Supplies	4,736.00				4,736.00
f. Contractual	1,584.00				1,584.00
g. Construction	0.00				0.00
h. Other	13,600.00				13,600.00
i. Total Direct Charges (sum of 6a-6h)	444,224.00				\$ 444,224.00
j. Indirect Charges	55,776.00				\$ 55,776.00
k. TOTALS (sum of 6i and 6j)	\$ 500,000.00	\$	\$	\$	\$ 500,000.00
7. Program Income	\$ 0.00	\$	\$	\$	\$ 0.00

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program		(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8.	Enhanced Air Quality Monitoring for Communities	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>
9.	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
10.	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
11.	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
12. TOTAL (sum of lines 8-11)		\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ <input style="width: 80%; text-align: right; value: 206,576.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 95,343.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 37,078.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 37,078.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 37,077.00;" type="text"/>
14. Non-Federal	\$ <input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>
15. TOTAL (sum of lines 13 and 14)	\$ <input style="width: 80%; text-align: right; value: 206,576.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 95,343.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 37,078.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 37,078.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 37,077.00;" type="text"/>

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program		FUTURE FUNDING PERIODS (YEARS)			
		(b)First	(c) Second	(d) Third	(e) Fourth
16.	Enhanced Air Quality Monitoring for Communities	\$ <input style="width: 80%; text-align: right; value: 146,712.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 146,712.00;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>
17.	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
18.	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
19.	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
20. TOTAL (sum of lines 16 - 19)		\$ <input style="width: 80%; text-align: right; value: 146,712.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 146,712.00;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges: <input style="width: 90%; text-align: right; value: \$444,224;" type="text"/>	22. Indirect Charges: <input style="width: 90%; text-align: right; value: \$55,776 (Salary + Fringe) * 15.29%;" type="text"/>
23. Remarks: <input style="width: 95%;" type="text"/>	

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Application for Federal Assistance SF-424

* 1. Type of Submission:

- ☐ Preapplication
☒ Application
☐ Changed/Corrected Application

* 2. Type of Application:

- ☒ New
☐ Continuation
☐ Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received:

03/22/2022

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name:

Wisconsin Department of Natural Resources

* b. Employer/Taxpayer Identification Number (EIN/TIN):

396006436

* c. Organizational DUNS:

8096112470000

d. Address:

* Street1:

P.O. Box 7921

Street2:

101 South Webster Street

* City:

Madison

County/Parish:

* State:

WI: Wisconsin

Province:

* Country:

USA: UNITED STATES

* Zip / Postal Code:

53707-7921

e. Organizational Unit:

Department Name:

Natural Resources

Division Name:

Environmental Managment

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

* First Name:

Sheralynn

Middle Name:

* Last Name:

Stach

Suffix:

Title: Business Support & IT Section Chief

Organizational Affiliation:

* Telephone Number:

608-264-6292

Fax Number:

* Email: sheralynn.stach@wisconsin.gov

Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.034

CFDA Title:

Surveys, Studies, Research, Investigations, Demonstrations, and Special Purpose Activities
Relating to the Clean Air Act

* 12. Funding Opportunity Number:

EPA-OAR-OAQPS-22-01

* Title:

Enhanced Air Quality Monitoring for Communities

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

Microscale Ambient Air Monitoring and Emission Inventory of HAPS, Ozone and PM2.5 with focus on
Port of Milwaukee and Surrounding Communities.

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424**16. Congressional Districts Of:*** a. Applicant * b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:* a. Start Date: * b. End Date: **18. Estimated Funding (\$):**

* a. Federal	<input type="text" value="500,000.00"/>
* b. Applicant	<input type="text" value="0.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="500,000.00"/>

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- ☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .
- ☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- ☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title: * Telephone Number: Fax Number: * Email: * Signature of Authorized Representative: * Date Signed:

Manifest for Grant Application # GRANT13578676

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 26745 bytes)

Forms Included in Zip File(total 6):

1. Form ProjectNarrativeAttachments_1_2-V1.2.pdf (size 16009 bytes)

2. Form SF424_3_0-V3.0.pdf (size 24278 bytes)

3. Form SF424A-V1.0.pdf (size 22947 bytes)

4. Form EPA4700_4_3_0-V3.0.pdf (size 22699 bytes)

5. Form OtherNarrativeAttachments_1_2-V1.2.pdf (size 16015 bytes)

6. Form EPA_KeyContacts_2_0-V2.0.pdf (size 37333 bytes)

Attachments Included in Zip File (total 7):

1. ProjectNarrativeAttachments_1_2 ProjectNarrativeAttachments_1_2-Attachments-1234-Project_Narrative.pdf application/pdf (size 270032 bytes)

2. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1236-EPA-FORM-Preaward_Compliance_Review_Report4700_4-FY22v1_signed1.pdf application/pdf (size 2789292 bytes)

3. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1237-Appendix_1_Letters_of_Support.pdf application/pdf (size 1645098 bytes)

4. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1238-Appendix_2_Quality_Assurance.pdf application/pdf (size 181022 bytes)

5. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1239-Appendix_3_Project_Team_Biography.pdf application/pdf (size 324544 bytes)

6. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1240-EPA-FORM-Cert_Lobbying6600_06-FY22_signed.pdf application/pdf (size 630553 bytes)

7. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1235-FWS-FY22C-Wisconsin Department of Natural Resources.pdf application/pdf (size 284583 bytes)

I: Cover Page

Project Title: Microscale Ambient Air Monitoring and Emission Inventory of HAPS, Ozone and PM_{2.5} with focus on Port of Milwaukee and Surrounding Communities.

Applicant Information:

Applicant Organization: **Wisconsin Department of Natural Resources**

Address: 101 South Webster Street P.O. Box 7921 - Madison, WI 53707-7921

Contact Person: Katie Praedel, Wisconsin Department of Natural Resources

608-259-6108

Katie.Praedel@wisconsin.gov

DUNS number: 8096112470000

Set-Aside: No set-aside

Applicant Organization: The Wisconsin Department of Natural Resources (DNR) Air Management Program is the SIP approved and delegated authority for implementation of the Clean Air Act in Wisconsin and works to maintain and improve Wisconsin's air quality to protect public health and the environment. Ongoing projects include regulatory air quality monitoring and associated outreach of air quality through the measurement of criteria pollutants, hazardous air pollutants and emerging contaminants as outlined in section 103, 105, and national program guidance. Additional recent efforts related to the proposed project include PM_{2.5} air quality sensor testing, expertise and project oversight of enhanced ozone monitoring to meet air quality goals associated with ozone non-attainment areas (highlighted in this proposal).

Project Partners: Urban Ecology Center (UEC), Groundwork Milwaukee (MKE), UW School of Freshwater Sciences (UWSFS), Sixteenth Street Community Health Center (SSCHC), Asthma Alliance, Harbor District, Inc. (HDI)

Project Location: Milwaukee, WI

Air Pollutant Scope: Particle Pollution (PM_{2.5} and PM₁₀), Chemical Speciation Network (to determine aerosol composition), Ozone, Hazardous Air Pollutants (speciated and total VOC), Mercury, Lead (EI), CO, NO₂, NO, CO₂, SO₂

Budget Summary:

EPA Funding Requested	Total Project Costs
[\$500,000]	[\$500,000]

Project Period: November 1, 2022 to October 31, 2025

Project Description:

The DNR Air Program, in partnership with Sixteenth Street Community Health Center (SSCHC), and other groups intends to determine local hotspots and emission sources using community scale monitoring combined with microscale emission inventory. The area of focus is an environmental justice community near the Port of Milwaukee where Hazardous Air Pollutants have been monitored for decades at SSCHC. The funding will allow the state to build upon existing multi-pollutant ambient air monitoring expertise and networks to identify and confirm areas where disparity exists and what mitigation options can be identified, promoted and communicated locally to resolve disproportionate impacts.

II. Workplan

Section 1 – Project Summary and Approach

A. Overall Project

The funding requested will be used in large part for DNR staff time to perform additional monitoring, gathering emissions inventory data, community outreach and data analysis. DNR staff are well equipped to collect and analyze microscale level data at hotspot areas identified by decades of monitoring and have been shown to be disproportionately impacted. The project plan includes the purchase of two pieces of equipment and associated data visualization tools to allow for the advancement of community knowledge and involvement in air quality and DNR and local municipality collaboration in mitigation to improve local air quality for many years. This funding will establish the framework to allow the DNR to continue this mission beyond when this funding may be available.

Objectives and deliverables

1. Determine scope of disproportionate air quality impacts to a local Milwaukee community and engage the community in air quality monitoring.
 - The DNR will leverage existing historical data collected at the SSCHC monitoring site to establish data analysis tools and identify areas of concern.
 - Work with partners (UEC and Groundwork MKE) to install PurpleAir sensors at community garden sites and install 2B AQSync at UEC to track microscale air quality trends and engage the community.
2. Use microscale monitoring and emissions inventory to determine source apportionment
 - Deploy DNR owned Mobile Air Monitoring Laboratory (MAML) and Air Toxics Trailer (ATT) in areas anticipated to have the highest PM_{2.5} concentrations.
 - DNR Southeast Region Service Center (SER) – below freeway interchange and within 40 meters of major Port of Milwaukee rail artery
 - UWSFS – Near shore adjacent to the Port of Milwaukee
 - Using available governmental databases, online resources and physical observation, map all air point and area sources including area sources and nonpoint sources within the targeted monitoring areas and create an emissions inventory (EI) of the emissions of scoped pollutants.
 - Use regulatory grade data from aforementioned monitoring and inventory results to determine source apportionment and communicate data to the Port of Milwaukee and Harbor District, Inc. (HDI) to encourage voluntary emission reductions.
 - Deploy mobile PAM sensors (equipped with CO, PM_{2.5}, O₃, NO₂, NO, CO₂, tVOC) on a DNR owned electric vehicle which will be driven through microscale neighborhoods on a prescribed schedule throughout the study period.
 - While collecting mobile data, note local potential emitters and areas of focus for objective 3.
3. Determine mitigation techniques to plan, enforce and encourage controls on local sources impacting the community.
 - Use the mobile monitoring data to use the monitoring data and emission inventory to inform outreach efforts
 - Collaborate with the Milwaukee HDI in control and mitigation strategies to control emissions of local sources.

Leverage expertise & Leverage use of existing resources

The DNR plans to leverage existing air staff (field operators, data managers, compliance inspectors, coordinators, air quality sensor experts and outreach personnel) expertise and equipment to supplement the proposed project. These readily available resources will be used to make progress towards not only identifying hotspot pollution areas but affecting change to mitigate those hotspots in an area that is recognized as having one of the highest asthma disparities in the country¹, associated increased emergency department visit² and overall negative health outcomes associated with Covid-19.

The benefit of funding this proposal is not only that the participating DNR staff are trained as experts in the monitoring and compliance fields but that the DNR possesses the majority of the IT telemetry, Quality Assurance (QA) and equipment that will be used for this study. The existing DNR resources put forward are estimated to total over \$500,000 in in-kind expenses, in equipment. Expert staffing is outlined below (Sec. 6c) and associated staff time is included in the proposal for funding.

The SSCHC has hosted a DNR air monitoring station since 1991. As outlined in Wisconsin's 2022 Air Monitoring Network Plan, the pollutants measured there include ozone, PM_{2.5}, and PM_{2.5} speciation. The site has been an Urban Air Toxics Monitor (UATM) for decades which monitors for a defined set of UATM Hazardous Air Pollutants (HAPs) on a one in six day schedule. Finally, elemental mercury monitoring has been conducted at this site for many years. Recently, increased concentrations of mercury have been recorded. Understanding this increase is one of the many goals of this proposal. This site is in an environmental justice area, houses the administrative offices of one of our primary partners (SSCHC) in the project and is the proposed central location for the three yearlong study.

DNR has a Mobile Air Monitoring Laboratory (MAML) that would be deployed for the duration of the study, beginning at the Milwaukee DNR service center. This site is beneath a freeway interchange and next to a primary artery of the Port of Milwaukee. It would be used as a comparative stationary site in an effort to determine an area of highest impact related to the highway and the Port. The MAML can be moved and is equipped with continuous FEM equipment that measures CO, SO₂, PM_{2.5}, O₃ and NO₂.

A smaller mobile air monitoring laboratory would also be deployed at a site where DNR partners with UWSFS. This site offers excellent siting in the Milwaukee Harbor District where it is proximal to multiple small industrial sources and can provide information about PM_{2.5}, ozone and other pollutant contributions directly from the Port.

B. Project Significance

The area of focus has been an Environmental Justice area for decades. This proposal will allow the DNR to make significant progress towards improving the area's local impacts through the reduction of PM_{2.5} and precursor pollutant concentrations. The Port and Menomonee Valley neighborhoods of Milwaukee are areas suspected to have high numbers of air pollution sources that individually emit below regulatory thresholds but, in aggregate, may result in significant air pollution impacts. Efforts to identify and reduce impacts from these sources have not been directly explored in this way. Monitoring at the SSCHC indicates elevated levels of PM_{2.5}, mercury and other HAPS which impact to the local community. Understanding these local impacts will also help Wisconsin address ozone non-attainment issues and mitigate impacts of PM_{2.5} pollution that is disproportionally impacting air quality in the underserved area intended to be the focus of this study. The community of focus is primarily a Hispanic community. EJ screen statistics are

¹ DHS, state of asthma burden in Wisconsin <https://www.dhs.wisconsin.gov/publications/p02412-20.pdf>

² DHS, Environmental Public Health data Tracker, 2020 counts <https://dhs.wisconsin.gov/DHS/EPHTracker/#/map/Asthma/asthmaIndex/NOTRACT/Emergency%20Department%20Visits>

outlined below.

Section 2 – Community Involvement

A. Community Partnerships (See Appendix 1 for Letters of Support)

Milwaukee Sixteenth Street Community Health Center

SSCHC has served the residents of the south side of Milwaukee and Waukesha for over 50 years. Their mission is to provide high quality medical, behavioral and substance use care to all community members. Their care and educational programming seek to address these issues while sustaining a healthier community. The DNR and SSCHC have maintained a close working relationship for decades. Currently, a Wisconsin ambient air monitoring network site is located on the roof of their south side location. The *Project* would use the data generated from this existing site to compare to street-level monitoring data from adjacent neighborhoods. This partnership ensures that the data is widely distributed, is high quality and available throughout the community. SSCHC would receive a low-cost sensor to perform street-level monitoring as part of educational programming. Additionally, the Health Center would directly link the Sixteenth Street data to their website for ease of access to community members.

Urban Ecology Center

The UEC's primary mission is to connect people in cities to nature and each other. Since 1991, the UEC has worked to educate and restore the communities and natural areas in select locations throughout Milwaukee. They have provided educational training to school-age children on the importance of green spaces and how we all can serve as better custodians of nature. Their science-based programming has created a long history of partnership with DNR. The *Project* would use this partnership to further community engagement and communication. The DNR would place a multi-parameter air monitor at the UEC Menomonee Valley location. This would generate monitoring data for comparison with the other established locations around the Milwaukee Port. UEC can use this data in educational programming and outreach.

Groundwork MKE

Groundwork MKE is part of the Groundwork USA network of independent, not-for-profit, environmental businesses called Groundwork Trusts. Locally organized and controlled, Groundwork Trusts provide cost effective project development services focused on improving their communities' environment, economy, and quality of life. Each Trust represents a strong partnership between government, business, foundations, community groups and residents. Projects serve a common agenda and are designed to accomplish other goals, such as job training and environmental education for at risk youth and rehabilitated adults entering the workforce. All projects and activities of Groundwork are carried out through a creative mix of staff and volunteers to leverage resources and engage businesses and residents to transform their own communities. For the project they intend to leverage existing community partnerships to engage communities in air monitoring and have identified the potential to install DNR owned PurplAir Sensors in community gardens.

Harbor District

HDI's mission is to revitalize Milwaukee's Harbor District in the Port of Milwaukee by connecting people to place, supporting a healthy business community and improving the quality of the natural environment. They work directly with nearby residents through regular meetings of their Neighborhood Advisory Committee. An area alderman serves on HDI's board, which connects the communities to their local government. Through this *Project*, DNR will leverage this line of communication to share air monitoring data and its interpretation with relevant stakeholders, who can ultimately use it for better understanding of the Port's impact on the city and inform decision-making for new policies.

Children’s Health Alliance of Wisconsin, Wisconsin Asthma Coalition

Wisconsin Asthma Coalition’s mission is to foster partnerships to improve asthma management, enhance quality of life, reduce disparities and prevent asthma-related deaths in Wisconsin. Their partnership with the DNR is to better understand the areas of disparities in Milwaukee and work to communicate and educate the data to stakeholders and the public. The Children’s Health Alliance of Wisconsin is submitting an independent grant proposal. The Wisconsin DNR will serve as technical experts for their sensor campaign and ensure a high level of quality assurance in their project.

University of Wisconsin- Milwaukee School of Freshwater Sciences

UWSFS is the only school of higher education in North America dedicated to the research of freshwater sciences. The school offers education experience in research, water technology industry, public policy, organizations, and federal and state government. The DNR monitoring section previously deployed a temporary monitoring trailer on the UWSFS property. For the *Project*, DNR would once again deploy a temporary monitoring trailer at this location to generate air monitoring data directly in the Port of Milwaukee. This data will be compared with other monitoring data generated at site locations outlined in this project.

B. Community Engagement

Partner representation includes a broad spectrum of community, neighborhood, local government, faith-based and public health groups. The initial work on this project will provide a significant level of collaboration with SSCHC, UEC and Groundwork MKE. The DNR will work with partners and their community stakeholders to ensure monitoring data is provided to local leaders, operators and partners, making the data useful and tangible for the area residents.

During the installation and field-testing portion of the study, DNR will work with local governments, non-profit organizations, faith-based leaders and community groups that are willing to assist in the placement and maintenance of air samplers. The DNR intends to use staff and volunteers from the UEC and Groundwork MKE to facilitate outreach with communities in areas where ambient sampling is planned. The staff and volunteers will facilitate the outreach that informs the community of air quality risks and connect with community members interested in supporting passive sampling efforts.

For engagement and sharing of the data, DNR will organize quarterly results, reporting materials and outreach (through stakeholder meetings and community meetings) that describe the progress of the project. Data will also be made available in real time on appropriate sensor applications (PurpleAir, AQSync). The DNR will develop and test an in-house built application for displaying the PurpleAir data.

The DNR plans to work with local leaders and HDI to share outcomes of the project in an effort to spur further emissions reductions and possible electrification of Port activities.

Section 3 – Environmental Justice and Underserved Communities

The Port of Milwaukee is home to 16+ permanent tenants ranging from agricultural export to bulk cargo. With an annual cargo volume of 2,812,008 tonnage in 2020 and covering 467 acres, the Port of Milwaukee is one of the largest in Wisconsin³. The Port handles many types of cargo including asphalt, cement, coal,

³ “2020 Annual Report”, *Port Milwaukee*, <https://portmilwaukee.com/port>

fertilizer, machinery, limestone, salt, steel and increasingly, wind energy equipment⁴. The major points of access to the Port are via the Canadian Pacific Railway and the Union Pacific Railroad as well as the Interstate Highway System.

The rail system cuts through the Menomonee Valley south of Downtown and directly west of the Port of Milwaukee. This is an area historically sited for industrial manufacturing including steel, metal recycling, machining and processing industries as well as coal-fired electric generating units.

The closest residential neighborhoods to both the Port and Menomonee Valley include Walker's Point, Harbor View and Clark Square. Combined, these neighborhoods have a population of 25,216 people which measures at or above the 83rd national percentile for all socioeconomic indicators except for residents above the age of 64. The highest socioeconomic indicators include low income, less than high school education and demographic index all at the 94th percentile. At the State level, the highest socioeconomic indicator is linguistically isolated at the 99th percentile. All indicators at the State level are at or above the 88th percentile except for over age 64.

The Environmental Justice Indexes are at or above the 79th national percentile and at or above the 92nd State percentile for all indexes. The area is rated at the 98th State percentile for Risk Management Plan (RMP) facility, traffic and diesel particulate matter⁵.

The neighborhoods targeted by the *Project* are disproportionality affected by Environmental Justice Indexes and Socioeconomic Indicators, especially in comparison within Wisconsin. The *Project* would enhance understanding of microscale air quality at DNR and for those communities directly impacted. The data collected can directly educate residents on hyper-localized air quality and how to use public input to make changes on the local level. The DNR and partners would work to progress Port innovation and clean alternatives. This work and associated data collection outreach efforts would improve area health outcomes in both the short and long term.

Section 4 – Environmental Results – Outcomes, Outputs and Performance Measures

A. Expected Project Outputs and Outcomes

Expected quantitative outcomes and outputs include high quality microscale multipollutant monitoring and emissions inventory data. This data will be shared with local partners and stakeholders with a result of qualitative outcomes through the engagement of underserved communities, encouragement of air quality awareness for local decision making and asthma trigger reductions and mitigation of improvements by way of emission controls and clean alternatives.

B. Performance Measures and Plan

Table 1: Projects Environmental Results

Task/Description	Outcome	Outputs	Performance Measure
Task 1: Documentation The DNR will draft a new quality assurance project plan (QAPP) for the study. Existing standard operating procedures (SOPs) for chosen criteria pollutants and any other parameters will be reviewed and if necessary	QAPP will be drafted within prior to the air sampling start up and will be reviewed and finalized within 6 months of the start of sampling.	Project QAPPs approved. Technical Notes may be developed for members of the public that may	All revised and new documents (QAPPs, SOPs, and Technical Notes) be reviewed internally by monitoring section staff and QAPPs will be reviewed

⁴ Wisconsin Department of Transportation, Bureau of Planning and Economic Development, "Economic Impact of Wisconsin's Commercial Ports", *Wisconsin Department of Transportation*, 2014, <https://wisconsindot.gov/Documents/travel/water/ports-report.pdf>

⁵ All percentile data from EPA EJScreen, "Specified Area" Reports

Task/Description	Outcome	Outputs	Performance Measure
modified to address the sampling at the chosen location(s).	Applicable pollutant SOPs will be reviewed by the team within 1 month of the start of sampling.	assist in sampling for the field program.	externally by Region 5 EPA QA staff.
Task 2: Equipment Purchase, contracting, subawards. The DNR will purchase new air sampling equipment for this study consisting of an AQSync and PAM from 2B Technologies. The DNR will contract with AQSense for data storage for this study.	Use standard DNR purchasing protocols to complete the purchase process. Memorandum of Understanding or equivalent document will be developed for the project.	The DNR will secure additional sampling equipment necessary for the project.	The DNR will report on purchases in semiannual reports. Share performance of this new technology with other states.
Task 3: Installation, Evaluation and Testing The AQSync will be colocated with the Mobile Air Monitoring Laboratory (MAML) which will house reference instruments at the start of the sampling period. They will be located at the SER building in Milwaukee, WI. The AQSync will be moved to the UEC location for multiple months following collocation with the MAML to facilitate community involvement. The PAM will be installed on an electric vehicle for intentional mobile monitoring. The PAM will collocate with the AQSync on a defined schedule to calibrate and upload data to the cloud.	Initial testing of the AQSync and PAM will determine if the sensors within each are operating as expected and analyze data for agreement with the reference instruments. UEC relocation will result in training for educators and outreach to students and the local community	Sampling system installed and tested in order to collect samples in an underserved community in Milwaukee, WI. Testing data will be analyzed for agreement. Comparison of concentrations of pollutants measured by the AQSync and PAM vs. reference instruments.	All progress on the installation and data from testing will be documented and data will be quality assured and shared on a scheduled basis, minimally every 6 months.
Task 4: Initial Monitoring Collocate an AQSync with the regulatory monitors installed in the Mobile Air Monitoring Laboratory (MAML) for multiple months at the DNR Headquarters in Milwaukee. Station a trailer with regulatory monitoring instrumentation near the Port in Milwaukee. Secure the PAM on a vehicle and drive the underserved neighborhoods within the study area. Determine area boundaries for air pollution source inventory	Site operators will download data from the AQSync, PAM and regulatory monitors throughout the collocation and initial stages of monitoring. Data will go through a QA/QC procedure. Car top PAM with parallel emissions inventory (EI) will result in local pollutant hotspot identification Outreach to the community to gain interest, trust and understanding of the project and health impacts currently being experienced.	A data set from the collocation and initial study period will be used to inform the public of pollutant concentrations. Show data on an available and usable platform to educate citizens in the area about pollutant impacts. Compliance inspector generates a map of existing air pollution sources	Outcome will be the sampling completeness and measurement agreement. EI with mobile monitoring will result in working with local municipalities and small sources to mitigate issues impacting the community. Map of air sources has been created.

Task/Description	Outcome	Outputs	Performance Measure
Task 5: Long-Term Monitoring An AQSync located at pre-determined locations. Can move the unit to areas of interest for multiple months. Existing monitoring at SSCHC (O ₃ , PM _{2.5} , Metals, UATM, PM _{2.5} Speciated) Deploy the Mobile Air Monitoring Laboratory (MAML) at the SER HQ, which will be equipped with NOx by CAPS, SO ₂ , CO, O ₃ , PM ₁₀ /PM _{2.5} /PM ₁ , WS/WD/Ambient Temperature. Deploy a second trailer equipped with sensors such as NO ₂ by CAPS, O ₃ , PM ₁₀ /PM _{2.5} , SO ₂ , CO at UWSFS. Generate Emissions Inventory of sources in Mapped area	Data to show a possible impact of industries within the study area on the air quality in the community. Policy action requested of industries found to be polluters in order to reduce their emissions, which would improve the human exposure in the study area. Combine information from business owners and existing area and point source EI's to develop emissions inventory of the mapped area.	Team up with a compliance inspector to locate sources with which to work with in order to improve their operations following the study period of three years and decrease emissions. Comparison between the source impact (Port) and local impact (neighborhood industry). Emission inventory database	Monitoring around a specific area of MKE to understand the impact of certain industries and pollution sources. Continue monitoring once policy actions or limitations to emissions are presented to companies to understand the impact and see the improvement. Compare baseline emission inventory data with emissions after outreach, pollution prevention and controls have been implemented
Task 6: Community engagement Working with students from the UWSFS, SSCHC, Groundwork MKE, UEC and the community in which sampling is occurring.	Identification of the community knowledge, interest and understanding the impacts of criteria pollutants.	Participant survey results, community concerns and interests, and report of criteria pollutant data gaps in the community.	Establishment of 3 to 3 community members and local groups that are willing to participate in project activities. Make data available real time

C. Timeline and Milestones

Timeline	Milestones
Fall 2022	Draft QAPP; review/modify existing documentation; procure PAM, AQSync (quoted January 2022); quote from AQSense, draft MOU; prepare quarterly report*
Winter 2023	Finalize QAPP; Technical Notes as needed; schedule MAML, AQSync, PAM sampling; deploy AQSync, PAM, MAML** at DNR SER HQ (test)
Spring 2023	Compare reference instrument data with PAM, AQSync; if comparable, install PAM state-owned vehicle, begin mobile surveys in neighborhoods
Summer 2023	Begin mapping air pollution sources in target area(s); relocate AQSync to UEC Menomonee Valley, train users (UEC educators, students, community members); deploy PurpleAir sensors (Groundwork MKE), train users (Groundwork MKE staff, community members); continue PAM neighborhood surveys; community engagement (develop survey to gauge concerns, understanding of criteria pollutant monitoring)
Fall 2023	Continue source mapping, PAM neighborhood surveys; develop platform for data display and associated educational tools available to the public
Winter 2024	Prepare emissions inventory of mapped sources; analyze PAM data, identify pollutant hotspots; determine location(s) of interest for AQSync (UEC or elsewhere)
Spring 2024	Deploy trailer at UWM SFS, AQSync at location determined above; continue PAM neighborhood surveys; continue community engagement
Summer 2024	Finalize baseline emissions inventory; continue PAM neighborhood surveys

Fall 2024	Identify pollution sources for outreach on control strategies; compare source (Port) and local (neighborhood industry) impacts
Winter 2025	Continue source outreach on control strategies; prepare second year emissions inventory of sources in target area(s)
Spring 2025	Continue source outreach on control strategies; publicize successful reduction
Summer 2025	Finalize second year emissions inventory; use MAML, PAM, AQSync to monitor effects of mitigation strategies; continue work with community partners, communicate study findings; finalize final report
*Item performed quarterly (listed once)	
**Installation/operation of AQSync, PAM, MAML includes regular download/review of data by site operator and QA/QC of data by QA group	

Section 5 – Quality Assurance Statement (See Appendix 2)

Section 6 – Programmatic Capability and Past Performance

A. Past Performance

The DNR has a well-established record of carrying out environmental projects similar to what is proposed.

1. Grant# 00E17105 – WDNR Horicon Monitoring Site [NATTS]
2. Grant# 98577809 – Wisconsin DNR PM_{2.5} Monitoring Network [Section 103]
3. Grant# 6OHBIO00019-16-00 – BioWatch [Homeland Security]
4. Grant# 00521215 – WDNR Section 105 Grant
5. Grant# DS00E66804 – DERA State Clean Diesel

The DNR Air Monitoring program was able to successfully complete and manage all agreements using multiple institutional mechanisms to ensure agreed upon outputs and outcomes are achieved. Grant project officers provide oversight and coordination and are responsible for meeting technical reporting and periodic project status requirements conveyed through routine updates/communications with EPA. Quality controls, dedicated timelines, consistent monitoring of project scope and financial resources. With quality controls, dedicated timelines, consistent monitoring, well established software, and exemplary staffing the DNR Air Monitoring program can ensure all current and future obligations and commitments are met. DNR's compliance program has consistently met all EPA inspection commitments and emissions inventory reporting requirements.

B. Reporting Requirements

For each agreement listed above the DNR Air Monitoring program was able to adequately and timely report on the progress towards achieving the expected outputs and outcomes of those agreements. In all of the above agreements final technical reports were submitted under the agreement(s) guidance meeting all EPA and Homeland Security requirements.

C. Staff Expertise (See Appendix 3)

The DNR Air Monitoring Section has demonstrated a long history of programmatic capability successfully implementing and operating regulatory grade air monitoring networks for all criteria pollutant National Ambient Air Quality Standards (NAAQS) including fine particulates (PM_{2.5}). In 2018, DNR replaced its aging network of FRMs and BAMs with a statewide network of T640s as the primary PM_{2.5} network in Wisconsin relying on light scatter technology. The 2018 network-wide transition to light scatter technology coincided with the emergence of low-cost sensor fine particulate monitoring amongst the community of Wisconsin citizen scientists and created an opportunity for the DNR to preemptively conduct several comparison studies with low-cost sensors using the FEM T640 monitors. As a result, DNR Air Monitoring staff developed outreach materials targeted to citizen scientists to equip them with the knowledge and tools required to conduct sensor studies while being aware of the limitations of these low-cost sensors. The comparison

studies also lead to DNR’s development of a PurpleAir correction factor for Purple Air sensors located in Wisconsin. The publicly available materials listed on the DNR website include the following DNR authored documents:

- [Comparison of Low-Cost Versus Federally Certified Methods of Measuring Fine Particle Pollution \[PDF\]](#),
- [Considerations for Designing a Monitoring Study \[PDF\]](#)
- [Wisconsin DNR 2019 Purple Air Study Summary \[PDF\]](#)
- [Purple Air Study Quality Assurance Project Plan \[PDF\]](#)

Since the PM_{2.5} network transition in 2018, the monitoring section has honed its capability to expertly operate the network of T640s and low-cost Purple Air sensors through the close coordination of the Air Monitoring field operations, quality assurance (QA), and BioWatch/Toxics teams lead by the air monitoring section chief Katie Praedel (17 years of air monitoring experience, resume and biography attached). Additionally, DNR will employ one compliance inspector to assist with the design of the community level microscale emissions inventory highlighted in this study. The compliance inspector has more than 5 years’ experience with the Wisconsin DNR performing engineering evaluations of air contaminant sources with respect to air pollution control laws and rules. When noncompliance is found, they take appropriate actions with the goal of returning the source to compliance as quickly as possible. They are experienced in helping sources prepare emission inventory reports, and in helping sources understand their air pollution emissions and compliance responsibilities. They assist sources, governmental units, and the public in understanding the air management program.

The field operations team consists of nine full time field operators, two hybrid field & QA operators, the field coordinator Ben Evans (12 years of air monitoring experience) and field supervisor Ben Wolf (7 years of air monitoring experience). This team meets regularly to provide training on the latest operational guidance from the manufacturer, in house SOPs, and field tips and tricks based on accumulated institutional knowledge. Position descriptions and training plans for all field staff are attached. Staff performance is measured annually with the performance review process and field staff are held accountable to federal quality assurance procedures carried out by the QA team.

The QA team consists of the QA coordinator Pam Foy-Gilmore (7 years of air monitoring experience) and three QA staff. This team meets regularly to collaborate on data certification, network health and maintenance monitoring, QA documentation including SOPs and QAPPS, conducting internal audits and addressing the results of EPA Technical Systems Audits (TSA). The QA team developed Wisconsin’s Purple Air correction factor as well as other community targeted literature on the considerations for designing a low-cost sensor monitoring study.

The BioWatch/Toxics team is led by toxics coordinator Caitlin Kohlbeck (9 years of air monitoring experience). This team has the dual responsibility of operating Milwaukee’s national BioWatch network as well as handling all Hazardous Air Pollutants (HAPs) monitoring across the state at the Horicon National Core (NCORE) site as well as the 16th Street Urban Air Toxics (UATM) site located at the SSCHC, one of the focus areas of this study on Milwaukee’s South Side environmental justice neighborhood known as Walkers Square.

Section 7 – Budget

A.1 Budget Table

Line Item & Itemized Cost	Year 1	Year 2	Year 3	EPA Funding Total
Personnel				

(1) Project Manager - Katie Praedel [20 hours annually @ \$69.26/hr]	\$1,385	\$1,385	\$1,385	\$4,155
(2) Compliance Inspector [1000 hours annually @ \$55.89/hr]	\$55,890	\$55,890	\$55,890	\$167,670
(3) Chemist [85 hours annually @ \$43.89/hr]	\$3,731	\$3,731	\$3,731	\$11,193
(4) Toxics Coordinator [150 hours annually @ \$56.40/hr]	\$8,460	\$8,460	\$8,460	\$25,380
(5) Field Operator [160 hours annually @ \$48.48/hr]	\$7,757	\$7,757	\$7,757	\$23,271
(6) QA Coordinator [80 hours annually @ \$56.38/hr]	\$4,510	\$4,510	\$4,510	\$13,530
(7) Outreach Specialist [10 hours annually @ \$43.14/hr]	\$431	\$431	\$431	\$1,293
(8) BSIT Section Chief [1 hours annually @ \$69.26/hr]	\$69	\$69	\$69	\$207
(9) Grant and Budget Admin [2 hours annually @ \$58.01/hr]	\$116	\$116	\$116	\$348
TOTAL PERSONNEL	\$82,349	\$82,349	\$82,349	\$247,047
Fringe Benefits				
Fringe Rate 47.66% - [FICA 7.65%, Retirement 6.75%, Sick Leave Conversion 1.10%, Unemployment 0.04%, Income Continuation 0.41%, Health Insurance Premiums 25.91%, HAS Contribution & Fees 0.38%, ETF Admin Fee 0.01%, Opt-Out Award 0.14%, Life Insurance 0.11%, and Prior Service 4.92%]	\$39,248	\$39,248	\$39,248	\$117,744
TOTAL FRINGE BENEFITS	\$39,248	\$39,248	\$39,248	\$117,744
Travel				
Travel to deployment location [20m * 52 weeks * \$.20/mile fleet rate]	\$208	\$208	\$208	\$624
Compliance Travel [20m * 52 weeks * \$.20/mile fleet rate]	\$208	\$208	\$208	\$624
TOTAL TRAVEL	\$416	\$416	\$416	\$1,248
Equipment - [Equipment Capitalization Threshold = \$5,000]				
FEM Air Quality Monitoring Station (Met, PM, O3, NOx, CO, CO2, tVOC) with cell and data package	\$50,000			\$50,000
1 mobile monitoring sensor with data acquisition system	\$8,265			\$8,265
TOTAL EQUIPMENT	\$58,265	\$0	\$0	\$58,265
Supplies				
Purple Air Monitors (6 @ 250 ea.)	\$1,500			\$1,500
General MAML and Toxics Trailer Consumables	\$1,578	\$1,579	\$1,579	\$4,736
TOTAL SUPPLIES	\$1,578	\$1,579	\$1,579	\$4,736
Contractual				
LADCO Contract - [10 hours annually @ \$69.26/hr]	\$528	\$528	\$528	\$1,584
TOTAL CONTRACTUAL	\$528	\$528	\$528	\$1,584
Other				
POD Installation & Deployment	\$2,000	\$400	\$400	\$2,800
Electrical Service - \$150 month * 12 months * 2 trailers	\$3,600	\$3,600	\$3,600	\$10,800
TOTAL OTHER	\$5,600	\$4,000	\$4,000	\$13,600
Indirect Charges				
Federal Indirect Cost Rate x Personnel & Fringe Benefits = Indirect Costs	\$18,592	\$18,592	\$18,592	\$55,776
(Federal Negotiated Indirect Cost Rate = 15.29%)				
TOTAL INDIRECT	\$18,592	\$18,592	\$18,592	\$55,776
TOTAL FUNDING	\$206,576	\$146,712	\$146,712	\$500,000

TOTAL PROJECT COST††	\$206,576	\$146,712	\$146,712	\$500,000
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Personnel [\$247,049]

Project Managers: The project managers shall oversee all aspects of the grant coordination, be responsible for programmatic needs, reporting, and evaluation of the program.

Field Personnel: The field personnel will be responsible for instrument deployment, set-up, operation, mobile monitoring, emission inventory and some outreach.

Quality Assurance: Oversees and develops data management processes and tools for the study.

BSIT Section Chief & Grant and Budget Administrator: Supervises and administers all federal aid programs within the WDNR Air Program.

Travel [\$1,248] Includes travel to site location at 40 miles per week for 52 weeks at \$0.20 per mile. Per mile cost is based on the state fiscal year 2022 fleet rate. There is no international travel for this project.

Equipment [\$58,265] FEM Air Quality Monitoring Station and Mobile Monitoring Station (Met,PM,O₃, NO_x,CO,CO₂,tVOC) including cell and data package. This will be utilized in combination with approximately \$500,000 worth of equipment already owned by the DNR.

Supplies [\$3,377] - 6 Purple air monitors will be acquired in year one and used throughout for project partners to track microscale air quality trends and engage the community. General air monitoring equipment consumable supplies estimated on general usage and includes but is not limited to air pumps, seals, locks, filters, and equipment cleaning supplies.

Contractual [\$1,584] An estimated 10 hours annually will be utilized from the Lake Michigan Air Directors Consortium [LADCO] staffing contract. These contract staff work with the WDNR Air Program and are integral to the support outreach and networking elements of the project.

Other [\$13,600] FEM sensor installation & deployment is estimated to cost \$2,000 in year one of the grant and \$400 per year in continued maintenance. Electrical service charges are estimated at \$150 per month for each trailer (2) for an annual cost of \$3,600.

Expenditure of Awarded funds:

- Equipment and Contractual lines will follow all state procurement guidelines and a competitive process will be used when required by regulation.
- We have attached our most recent negotiated indirect cost rate agreement at 15.29% of Salary & Fringe.
- Financial accountability has been demonstrated through systematic tracking by WDNR grant accountants and financial accountants. The State's budgetary information systems track project activity and related expenditures in-order to provide accurate fiscal reporting via project costing. State procurement policies and processes ensure funds are managed timely and in an efficient manner.

APPENDIX 2

QUALITY ASSURANCE

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

- WDNR Quality Assurance Statement

Appendix 2: DNR Quality Assurance Statement

Wisconsin DNR has an established air monitoring program with a robust quality management system. Documentation is a large part of the quality management system and includes an EPA approved Quality Management Plan, EPA approved quality assurance project plans (QAPPs) and DNR approved standard operating procedures (SOPs). These documents outline and support how DNR air monitoring follows Federal Rule, QA guidance documents and best practices. Our documents also provide a framework to prevent mistakes, what to do when an issue is identified, provides points of references for quality control measurements and promotes consistency throughout the air monitoring network.

The QMP provides an overview of the quality systems at DNR. The QAPPS provide specific requirements for different pollutants and guidance on best quality practices. Additional QAPPS are also project specific including: toxics networks, supplemental monitoring networks and sensor based technology. The QAPPS outline specific quality control checks like calibrations, verifications and precision checks of the instruments. The QAPPs also provide data quality objectives, representativeness of the data, what determines completeness. In writing a QAPP, DNR is able to fully plan, implement and assess the success of the project and the resulting data. These known quality principles give the framework for usable and defensible air monitoring data. DNR has experience with Purple Air sensors and developing a correction factor from sensor data to regulatory data. The sensor project demonstrates how DNR works with data for comparability, determining data quality and maintaining precision and accuracy of the data. The SOPs outline how to perform the QC checks and give field staff reliable and consistent documentation. The SOPs also outline best practices and helps the statewide air monitoring network to have consistency in operations. It also provides continuity for statewide operations.

Field operators are responsible for site operations, including collecting quality control data, preventative maintenance and troubleshooting. Daily, QA staff review nightly checks and continuous data. The data is preliminarily reviewed on a monthly basis. After this review, the QA coordinator does a final review. Once a final review is complete, the data is sent on to Air Quality System (AQS; national database of air monitoring data) or uploaded to a repository accessible to the general public (DNR managed).

Quality assurance specialists assist the quality assurance coordinator with record keeping, technical writing and quality assurance tasks related to air monitoring. The QA tasks include documenting and implement procedures associated with gathering, processing and reporting data. The Quality Assurance Coordinator develops, reviews and leads the implementation of documentation like the QMP, QAPPs and SOPs. They are also responsible for administering statewide quality assurance and data analysis programs for consistency across the state and meeting federal and state monitoring requirements while maintaining quality data objectives. The quality assurance team has the authority to qualify or invalidate data that does not meet specified quality standards outlined in documentation.

The regulatory monitors used in this project will follow DNR documentation and QA/QC best practices. Regulatory monitors have nightly checks, biweekly or more frequent checks with an additional precision point, and full scale checks every 90 days. Additional information can be found within our existing documentation. If funded, this project will have a specific quality assurance project plan drafted to reference and outline quality practices specific to this project.



United States
ENVIRONMENTAL PROTECTION AGENCY
Washington, DC 20460

OMB Control No. 2030-0020
Approval expires 04/30/2021

EPA Project Control Number

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Preston Cole, Secretary

Typed Name & Title of Authorized Representative

DocuSigned by:

Todd Amb

6/30/2021 | 2:57 PM CDT

Signature and Date of Authorized Representative

The public reporting and recordkeeping burden for this collection of information is estimated to average 15 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

APPENDIX 1

LETTERS OF SUPPORT

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

- Sixteenth Street Community Health Centers
- Harbor District, Inc (HDI)
- Children's Health Alliance of Wisconsin
- Groundwork Milwaukee
- Urban Ecology Center

Feb 18, 2022

To Whom it May Concern,

Sixteenth Street Community Health Centers is pleased to support the Wisconsin Department of Natural Resources (DNR) proposal titled "Microscale Monitoring of Criteria and Hazardous Air Pollutants and Emission Inventory with focus on Port of Milwaukee, Menomonee Valley and Surrounding Community Impacts."

Studies have found that U.S. minority populations are disproportionately exposed to air pollution regardless of income. Increased exposure to fine particle matter (PM_{2.5}) is linked to lung and heart disease such as asthma. Hyper-localized air monitoring in Milwaukee for particulate matter and the associated precursors will aid the Wisconsin DNR and community organizations in understanding how air quality impacts minority populations. This will directly assist local community partners with continuing to change and update zoning and housing directives.

Sixteenth Street Community Health Centers has cared for residents of the south side of Milwaukee and Waukesha for over 50 years. Our mission is to improve the health and wellbeing of Milwaukee and surrounding communities by providing quality, patient-centered, family-based health care. Our care for clients and their families is linked to a deep understanding of social and environmental determinants of health and the years of development of programming to address these factors, both inside and beyond our clinic walls, including the local environment.

Sixteenth Street Community Health Centers has a long working relationship with the Wisconsin DNR's air monitoring program. Data provided by this project on ambient concentrations of particulate matter and its precursors in the local community will aid in our center's mission. The project will help our Department of Environmental Health and Community Wellness engage our communities in responding to concerns about air quality and assist in the education of community members regarding air quality and with a goal of understanding the impacts on our neighborhoods.

The WDNR has a long history of leading emergent contaminant research, and we believe they are uniquely qualified to provide data to improve Wisconsin at a community scale. The Sixteenth Street Health Center is pleased to offer their support and encourage the Wisconsin DNR's proposal be selected for funding.

Thank you,



Julie B Schuller, MD, MPH, MBA
President & CEO



February 14, 2022

Katie Praedel
Air Monitoring Section Chief
Wisconsin Department of Natural Resources
PO Box 7921
Madison, WI 53707-7921

Dear Ms. Praedel,

Harbor District, Inc (HDI) is writing this letter in support of the work outlined by the Wisconsin Department of Natural Resources (DNR) proposal for funding assistance titled "Microscale Monitoring of Criteria and Hazardous Air Pollutants and Emission Inventory with focus on Port of Milwaukee, Menomonee Valley and Surrounding Community Impacts."

Studies have found that U.S. minority populations are disproportionality exposed to air pollution regardless of income. Increased exposure to fine particle matter (PM_{2.5}) is linked to lung and heart disease such as asthma. Hyper-localized air monitoring in Milwaukee for particulate matter and the associated precursors will aid the Wisconsin DNR and community organizations in understanding how air quality impacts minority populations. This will directly assist local community partners with identifying local air quality issues and mitigating the health risks associated.

HDI's mission is to lead revitalization of Milwaukee's Harbor District by connecting people to place, supporting a healthy business community, and improving the quality of the environment. We have a history of working to make improvements to water quality, habitat, and building access to greenspace and the waterfront. This project represents an opportunity for us to engage our constituency in air quality for the first time, in a part of the city that has many environmental justice challenges.

The WDNR has a long history of leading emergent contaminant research and we believe they are uniquely qualified to provide data to improve Wisconsin at a community scale. HDI is pleased to offer their support and encourage the Wisconsin DNR's proposal be selected for funding.
Sincerely,

A handwritten signature in black ink, appearing to read "Aaron Zeleske".

Aaron Zeleske
Environment Director

600 E GREENFIELD AVE, ROOM 124
MILWAUKEE, WISCONSIN 53204
HARBORDISTRICT.ORG



2/16/22

Katie Praedel
Air Monitoring Section Chief
Wisconsin Department of Natural Resources
PO Box 7921
Madison, WI 53707-7921

Dear Ms. Praedel,

Children's Health Alliance of Wisconsin is writing this letter in support of the work outlined by the Wisconsin Department of Natural Resources (DNR) proposal for funding assistance titled "Microscale Monitoring of Criteria and Hazardous Air Pollutants and Emission Inventory with focus on Port of Milwaukee, Menomonee Valley and Surrounding Community Impacts." Studies have found that U.S. minority populations are disproportionately exposed to air pollution regardless of income. Increased exposure to fine particle matter (PM_{2.5}) is linked to heart and lung disease such as asthma. Hyper-localized air monitoring in Milwaukee for particulate matter and the associated precursors will aid the Wisconsin DNR and community organizations in understanding how air quality impacts minority populations. This will directly assist local community partners with identifying local air quality issues and mitigating the health risks associated.

Children's Health Alliance of Wisconsin advocates for families and actively works to create programs to build healthier communities. Our Environmental Health initiative focuses on reducing asthma's effect on a child's quality of life and reducing asthma disparities. We are dedicated to creating healthy environments where all Wisconsin kids can live, learn and play.

The WDNR has a long history of leading emergent contaminant research and we believe they are uniquely qualified to provide data to improve Wisconsin at a community scale. Children's Health Alliance of Wisconsin is pleased to offer their support and encourage the Wisconsin DNR's proposal be selected for funding.

Sincerely,

Carissa Hoium

Carissa Hoium, MPH
Environmental Health Program Leader
Children's Health Alliance of Wisconsin



227 West Pleasant Street Milwaukee, WI 53212

February 28, 2022

Katie Praedel
Air Monitoring Section Chief
Wisconsin Department of Natural Resources
PO Box 7921
Madison, WI 53707-7921

Dear Ms. Praedel,

On behalf of Groundwork Milwaukee, I am writing this letter in support of the Wisconsin Department of Natural Resources' proposal for funding assistance: "Microscale Monitoring of Criteria and Hazardous Air Pollutants and Emission Inventory with focus on Port of Milwaukee, Menomonee Valley and Surrounding Community Impacts."

Groundwork Milwaukee's mission is to bring about the sustained regeneration, improvement and management of the physical environment by developing community-based partnerships that empower people, businesses and organizations to promote environmental, economic and social well-being. The organization fulfills this mission through the transformation of brownfields into community spaces including gardens, orchards, art exhibits, and gathering places; the facilitation of programs that are designed to educate, train, and empower youth, community members, veterans, and volunteers; and the protection of urban waters through the installation of rain water harvesting structures, the strategic integration of green infrastructure, and habitat restoration for aquatic native species.

As you know, low income and historically disenfranchised populations are disproportionately exposed to air pollution, and the situation is particularly true with the people served by Groundwork Milwaukee. Increased exposure to fine particulate matter has been linked to lung and heart disease. Hyper-localized air monitoring in Milwaukee for particulate matter and the associated precursors is urgently needed and will assist the Wisconsin Department of Natural Resources and community-based organizations like Groundwork Milwaukee in understanding how air quality impacts residents.

The Wisconsin Department of Natural Resources has an established track record in emergent contaminant research and I believe they are uniquely qualified to provide data to improve Wisconsin at a community scale, and I urge your support of this Wisconsin DNR's proposal be selected for funding.

Sincerely,

Young C. Kim, Executive Director

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Ed Krishok

March 9, 2022

Katie Praedel

Air Monitoring Section Chief

Wisconsin Department of Natural Resources

PO Box 7921

Madison, WI 53707-7921

Dear Ms. Praedel,

The Urban Ecology Center is writing this letter in support of the work outlined by the Wisconsin Department of Natural Resources (DNR) proposal for funding assistance titled "Microscale Monitoring of Criteria and Hazardous Air Pollutants and Emission Inventory with focus on Port of Milwaukee, Menomonee Valley and Surrounding Community Impacts." Studies have found that U.S. minority populations are disproportionately exposed to air pollution regardless of income. Increased exposure to fine particle matter (PM_{2.5}) is linked to lung and heart disease such as asthma. Hyper-localized air monitoring in Milwaukee for particulate matter and the associated precursors will aid the Wisconsin DNR and community organizations in understanding how air quality impacts minority populations. This will directly assist local community partners with identifying local air quality issues and mitigating the health risks associated.

This work aligns closely with the Urban Ecology Center's goals of connecting people in cities to nature and to each other by helping to identify barriers to access parks and other green spaces. The WDNR has a long history of leading emergent contaminant research and we believe they are uniquely qualified to provide data to improve Wisconsin at a community scale. The Urban Ecology Center is pleased to offer their support and encourage the Wisconsin DNR's proposal be selected for funding.

Sincerely,

Timothy Vargo

Manager of Research and Community Science